Are European Socially Responsible Mutual Funds rewarding and profitable?

by

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Thank you.

Abstract

The last two decades have shown us the growing importance of corporate, social and governance programs, as executives, investors and regulators have become increasingly aware of these programs' potential to mitigate corporate crises and build solid social reputation. Thus, mutual funds that invest according to social, environmental and ethical criteria have increased both in volume and value.

This paper investigates the performance of a sample of 80 socially responsible mutual funds from 8 European countries, within the period from 2002 to 2010. Using both the mainstream unconditional model and the most recent conditional models, we address a performance comparison between these funds and unscreened benchmark Indices as well as socially responsible benchmark Indices. We then attest the models results by applying the classical Sharpe Ratio to our Funds sample. We find out that European socially responsible mutual funds present, in general, neutral performance when compared with both benchmark portfolios. Furthermore, performance estimates seem to be slightly higher when funds are analyzed in relation to socially responsible indices and this benchmark has higher explaining power. Conditional models also seem to lead to a slight uplift of performance estimates and of explanatory capacity of the models applied. Sharpe Ratio confirms that there is no significant performance difference between the compared elements. This is consistent with most precedent empirical findings on this issue.

Our study reveals that investors can adhibit social screens to their investment choices without pledging their financial returns, contrary to portfolio theory predictions. This paper proves that it is possible to "do well (financially) while doing good (socially)".

Keywords: Socially Responsible Investing, Socially Responsible Mutual Funds, Socially Responsible Indices, Portfolio Selection, Conventional Market Indices.
JEL Codes: G11, G12, M14

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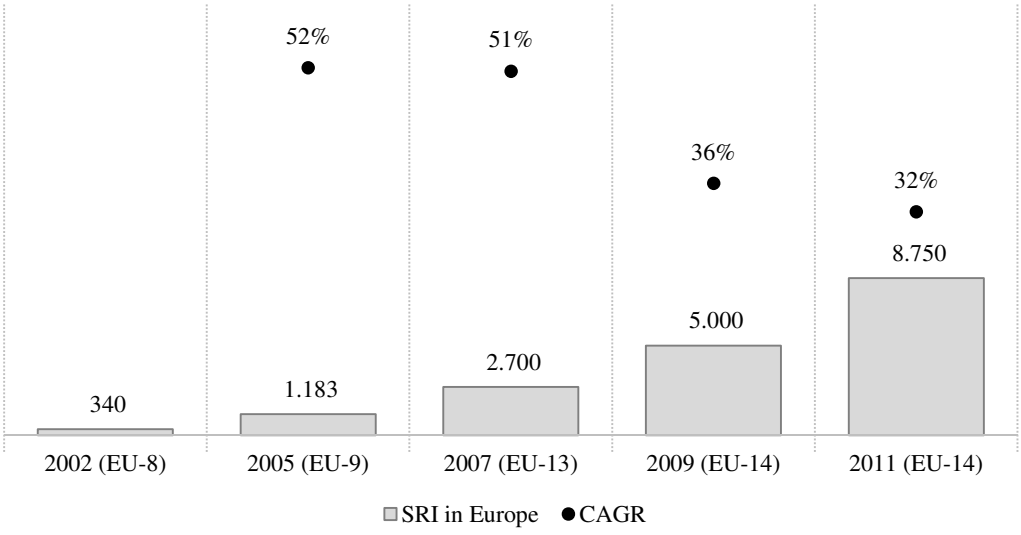
1. Introduction

"SRI is a generic term covering ethical investments, responsible investments, sustainable investments, and any other investment process that combines investors' financial objectives with their concerns about environmental, social and governance (ESG) issues. "(Eurosif, SRI Study 2008)

The concept of Socially Responsible Investments (SRI) has been receiving an increasing interest both in academic research and in literature. Accompanying this recent trend, a significant number of socially responsible mutual funds have been created worldwide. When we drive our focus to the European capital market, we find out that, according to Eurosif, the total SRI assets under management (AuM) in Europe have increased from €2.7 trillion in 2007 to €5 trillion in 2009 (see Graphic I).

Graphic I: SRI Investment in Europe 2002-2011 (EUR billion).

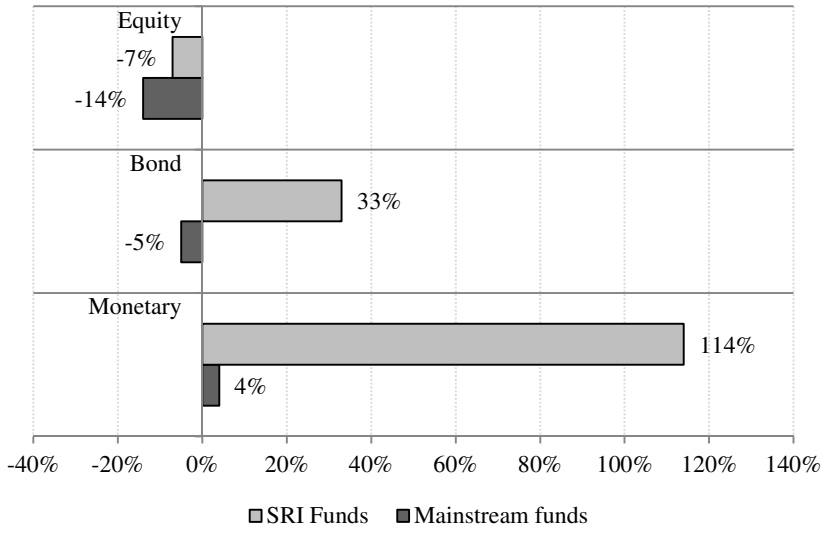


Source: European Eurosif SRI Survey, 2010 and 2012

Note: Market data coverage is evolving. 8 countries were covered in 2002, 9 in 2005, 13 in 2007 and 14 in 2009 and 2011.

This represents a growth of about 87% over two years or a compound annual growth rate of 37%, clearly outperforming the mainstream funds in every asset class (see Graphic II).

Graphic II: Growth of SRI and Mainstream Funds 2007-2009, by asset class.



Source: European Eurosif SRI Survey, 2010, EFAMA Factbook 2009.

Although the literature on SRI is growing, the central question of whether or not the investors' decisions are affected by non-financial screens has still an unclear answer. The financial performance of socially responsible funds provides a partial answer to the classical belief that ethical standards are inconsistent with the wealth maximization paradigm used in mainstream finance (Wood, 1987). The classical portfolio theory advocates that the addition of constraints to the diversification freedom will inhibit the creation of the optimal portfolio (Markowitz, 1952). In SRI, as the investments universe of selection is restricted, investor will abdicate from the potential for diversification that an unconstrained portfolio shows, which will be translated into lower risk-adjusted returns (Rudd, 1981 and Grossman and Sharp, 1986). As so, the portfolio theory culminates in the belief that socially screened portfolios imply a lower financial return.

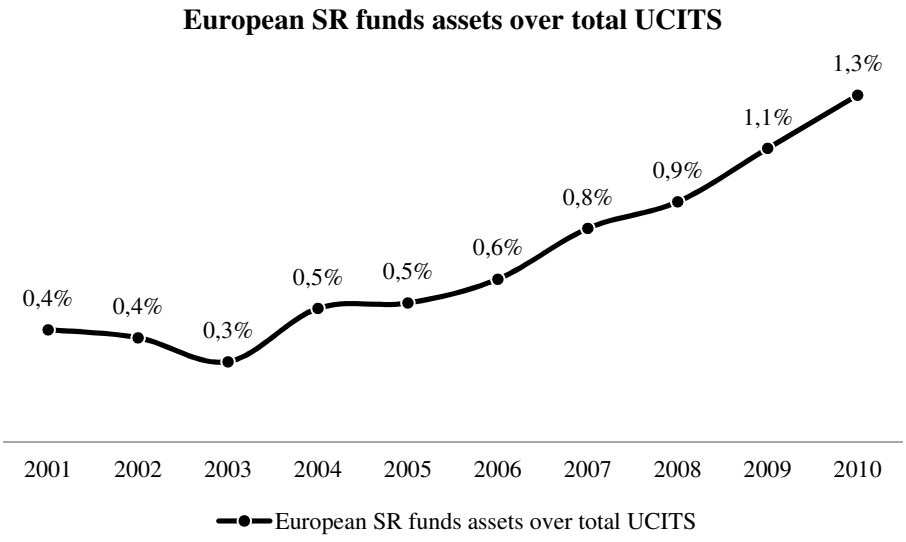
Contrary to these arguments, upholders of SRI defend that firms which engage corporate and social responsibility (CSR) programs will benefit from improved shareholder value in the long-run, although stock markets may undervalue CSR in the short-term. The reason that lies under this plea is that higher levels of CSR are an

evidence of high quality management practices and may reflect comparative advantages over the less responsible firms.

As empirical research was conducted, a general consensus soon emerged in the literature: there seems to be no significant difference between the performance of conventional un-screened benchmarks and socially responsible funds (Bello, 2005; Goldreyer, Ahmed, and Diltz, 1999). For example, several studies have compared the performance of indices that exclude companies with lower social records with conventional market indices and, in general, these studies (as in Grossman and Sharpe, 1986; Kurtz and DiBartolomeo, 1996; Guerard, 1997; Sauer, 1997; Statman, 2006) have found that the performance of social indices is comparable to the performance of broad market indices.

However interesting the studies on socially responsible investments may seem, the fact is that most of them have been focused on the US market, which is by far the most developed market on this issue. With the exception of the United Kingdom and France, the European socially mutual funds market is by far less explored than the former. Still, European socially responsible mutual funds are progressively increasing their weight in the overall European funds market since their genesis in 2001 (see Graphic III).

Graphic III: European Socially Responsible funds weight in total UCITS



Source: Green, Social and Ethical Funds in Europe, 2010 Review

UCITS: publicly offered order to be eligible for the analysis open-end funds investing in transferable securities and money market funds

As far as our knowledge goes, there were only three robust studies focusing on comparative analysis of several European markets. The first study was authored by Kreander et al. (2005) and focused on several European markets (Swedish, Dutch, German, British, Norway, Swiss and Belgian) but used the mainstream model without any control variable whatsoever. The findings suggested that there was no difference between ethical and non-ethical funds according to the performance measures employed. Bauer et al. (2005) added German market to the former sample and applied the more recent Carhart model to measure the funds, but there was total conformity with the conclusions of the former study. The last one, more recent and complete, is Cortez et al. (2009), which applied the more recent conditional models and focused only on European Mutual Funds. Despite the updates on methodology and time frame, the conclusions kept in accordance with the previous studies.

The purpose of this paper is to uphold the precedent studies' conclusions, by addressing the investigation of financial performance of a portfolio of Socially Responsible European Funds gathered from eight different countries (Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland and United Kingdom). More specifically, we assess the performance of these socially screened funds relatively to conventional and socially responsible benchmark portfolios, quite in line with Cortez et al. (2009) analysis. Performance measures are calculated using both traditional and conditional models of performance evaluation. Traditional performance measures are based on expected unconditional returns, neglecting for time variation in risk measures (betas) and expected returns (alphas). As so, this unconditional way of measuring performance can reveal itself not totally reliable. From an unconditional perspective, time variations in risk and risk premiums are associated with changes in average performance and, therefore, interpreted as superior information or market timing ability. Conditional models use instruments (macroeconomic variables) that reflect the time-varying expectations as a consequence of the changing economic conditions and, therefore, reduce the bias caused by the variation in returns and risks due to public information. Christopherson et al. (1998) model is an extension of Ferson and Schadt (1996) model which only accounted for time-variations of risk (beta). Christopherson added time varying estimates of performance depending on economic conditions. We obtain the Christopherson et al. (1998) model by incorporating the dynamic behavior to

alpha and beta parameters in Jensen's equation (1968). We find that conditional information is both economically and statistically significant and, therefore, that the incorporation of macroeconomic variables improves the explanatory power of the models applied, thus confirming the existence of a relationship between these variables and the expected investment funds' returns.

This exercise is important because, so far, there is no study focusing on the performance of funds from this sample of countries and also because the methodology usually used does not consider conditional variables for controlling the persistence effect on the funds' returns. Also, we are not aware of studies that complement the usual alpha analysis with the classical Sharpe Ratio measure, which tells us whether a portfolio's returns are due to smart investment decisions or a result of excess risk. The findings of our analysis are of major interest for investors and academic communities alike, adding a contribution to the recent literature dedicated to find out if it is possible to "do well while doing good" (Shank, Manullang, and Hill, 2005). The contribution of this study also spreads to the debate on market efficiency, which predicts that any screen on portfolio selection (whether based on social values or others), will compromise financial performance. Our findings show that there is a pattern of similar return between socially screened and conventional portfolios alike, questioning the mainstream finance theory.

This paper is organized as follows: the next section reviews the literature on the performance of socially responsible funds; secondly, the models are presented and the methodology is explained; then, the sample and data are introduced; follows the results to the empirical study and their critical analysis; finally, the conclusion sums up all stages and synthesizes the most important remarks.

2. Literature Review

In conception, Socially Responsible Funds (SRFs) invest according to social, ethical and non-economic guidelines. Generically, these investments may consist of funds that are screened according to an inclusion criterion (positive screens), an exclusion criterion (negative screens) or both (composed screens). The inclusion criterion integrates investments that have real concerns with social issues – for example, environmental responsibility, employee concerns, or product safety – and the exclusion criterion forecloses investments that are involved with pernicious industries, such as alcohol, tobacco, gambling, or the arming industry. There are also socially responsible funds that combine both of these screens. We will discuss SRFs irrespectively of the nature of the screen behind the fund.

Proponents (Camejo 2002; Harrington 1992) of such funds believe it is possible for investors to "do well" financially while also "doing good" socially. They suggest that socially responsible investments may produce higher risk-adjusted portfolio returns relatively to using all available stocks in the equity universe (Guerard 1997a, 1997b).

Opponents argue that the pursuit of a social agenda in the capital market may require a financial sacrifice. There are authors that believe that, at a firm level, complying with social criteria increases operating costs and can put a firm at a disadvantage relatively to non-complying rivals (Aupperle, Carroll, and Harfield 1985; McGuire, Sundgren, and Schneeweis 1988; Ullmann 1985). At a portfolio level, not only are socially responsible funds selecting firms that are likely to have higher operating costs, but they are also limiting their pool of available investments. Confined to a smaller subset of investment choices, socially responsible funds may carry substantial sector biases, thus increasing non-systematic risk (Kurtz and DiBartolomeo 1996). Rudd (1981) argues that the loss of diversification introduced by social screens increases the portfolio's covariation in returns unrelated to the market. Thus, the loss of diversification is unlikely to be offset by an increase in returns. Along this same line of argument, and in the context of the traditional mean-variance framework (Sharpe 1965), limiting the pool of available investments cannot result in an efficient frontier that provides a higher reward-to-risk ratio than the market portfolio.

But, as said primarily, there are also antipodal opinions to these last ones. For example, Kurtz (1997) suggests that socially responsible investments may be thought of as a trade-off of performance benefits and diversification costs. Benefits may take the form of more competent and growth-minded management being more inclined to pursue better environmental and corporate citizenship records as well as good employee relationships. Social responsibility may be indicative of management seeking to improve relations with as many parties critical to their future success as possible. The costs of sacrificing diversification may cut into these benefits because the social screens create portfolios that are unbalanced with respect to industry weightings, average market capitalization, and book-to-market ratios relatively to their unscreened counterparts. For instance, Clow (1999) notes that social and environmental screens often result in the exclusion of old-line industrial manufacturers, generating a growth and technology bias in screened portfolios.

Academic researchers have conducted many empirical studies analyzing the returns of socially responsible investing. Some studies focused on the performance of the Domini Social Index (Corson and Van Dyck 1992; Statman 2000), and found the returns comparable to the S&P 500 index. Similarly, Plantinga, Scholtens and Brunia (2002) have analyzed the Dow Jones European and Americas sustainable growth indexes and found no significant differences in their mean returns relatively to the all-inclusive Dow Jones Europe and Americas indexes. This suggests that investors could have pursued passive equity investing, based on broad SRI benchmarks, without sacrificing the returns achievable on diversified portfolios of the same types of securities.

Other studies have focused on socially responsibility at a firm level. These studies sorted individual stocks into portfolios (Diltz 1995; Corson and Van Dyck 1992) based on one or more social responsibility criteria and found that social screens neither help nor hurt performance.

A separate set of studies focuses on the returns' performance of mutual funds designated as socially responsible (SRFs) relatively to other conventional funds that do not screen their holdings. One of the earliest, Hamilton, Jo and Statman (1993), finds that the returns to socially responsible mutual funds are extremely similar to conventional mutual funds returns. The authors conclude that the market does not seem to price social responsibility attributes, suggesting that "doing good" may not allow an

investor to do better than the benchmark, but it also does not reveal itself as less profitable than the average capital market. Similar studies also typically find that the social screening that SRFs undertake neither helps nor hurts portfolio performance.

Proper benchmarking of fund returns is an issue that has more recently been investigated. Bauer, Otten, and Rad (2006) and Bauer, Koedijk, and Otten (2005) estimate fund alphas using the more recent and more elaborate four-factor Carhart (1997) model, which incorporates a momentum factor. They find that SRFs alphas are generally higher when estimated using the Carhart model relatively to the estimates from a single-factor market model. However, Bauer, et al. paper does not document a significant difference between the portfolios' performance (SRF return minus conventional fund return tends to zero). Taken together, the majority of the studies show that SRFs deliver returns not significantly different from returns of conventional funds (see Table I).

Table I: Former studies comparing Social Responsible Funds with Conventional Funds Performance (it can be non-exhaustive).

	Year	Significant under-performance of SRI funds	No significant performance difference	Significant out-performance of SRI funds	Total
Bauer, Derwall, Otten	2007	0	6	0	**6**
Bauer, Koedijk, Otten	2005	4	22	4	**30**
Bauer, Otten, Rad	2006	1	8	2	**11**
Bello	2005	0	6	1	**7**
Benson, Brailsford, Humphrey	2006	6	36	0	**42**
Bollen	2007	2	8	5	**15**
Chang, Witte	2010	10	20	4	**34**
Cortez, Silva, Areal	2009	40	44	4	**88**
Derwall, Koedijk	2009	0	23	9	**32**
Gil-Bazo, Ruiz-Verdu, Santos	2010	6	52	39	**97**
Goldreyer, Ahmed, Diltz	1999	3	9	0	**12**
Gregory, Matatko, Luther	1997	1	5	0	**6**
Gregory, Whitaker	2007	0	4	2	**6**
Hamilton, Jo, Statman	1993	0	2	0	**2**
Humphrey, Lee	2011	0	8	0	**8**
Kempf, Osthoff	2008	0	2	0	**2**
Koellner, Suh, Weber, Moser, Scholz	2007	0	5	1	**6**
Kreander, Gray, Power, Sinclair	2005	0	7	0	**7**
Kryzanowski, Ayadi, Ben-Ameur	2011	0	36	0	**36**
Liedekerke, Moor, Walleghem	2007	0	5	1	**6**
Mueller	1991	3	0	0	**3**
Renneboog, Horst, Zhang	2008	25	107	0	**132**
Sanchez, Sotorrio	2009	6	2	0	**8**
Spekl	2009	5	1	0	**6**
Statman	2000	0	2	0	**2**
Stenström, Thorell	2007	1	0	0	**1**
		113	**420**	**72**	**605**

Our analysis fits into the group of studies that focuses on SRFs returns performance. In this context of studies, Kreander et al. (2005) also performed a comparative analysis of a considerable number of socially responsible funds from seven European countries (Belgium, Norway, Netherlands, UK, Switzerland, Germany, Sweden) and their results showed, once again, no significant difference between the performance of socially responsible funds and conventional ones. The model applied considered the possibility of managers to follow a market timing strategy by using the simple Treynor and Mazuy (1966) regression model, which neglects other potential benchmark problems that arise in the context of the traditional measures of performance that are used.

In terms of methodology, the most recent studies on socially responsible funds' performance employ the conditional framework, as stated by Ferson and Schadt (1996), to assess funds' performance. It is of significant consensus that disregarding time variation in risk effect (betas) and expected returns (alpha) lead to biased estimates of performance. By controlling for this nature of potential biased results inherent to unconditional framework, conditional models allow for a more complete assessment of performance measures. In the context of screened portfolios, the results gathered by these models also seem to provide a better estimate of the risk-adjusted excess return (alphas) (Bauer et al., 2007, Bauer et al., 2006).

Although widely used in the general fund performance research, conditional models have only been applied to socially responsible funds in the limited version which controls for time varying betas (Ferson and Schadt, 1996). The more complete version of the conditional model, authored by Chritopherson et al. (1998), considers that not only risk (beta) is time-varying and dependent upon market conditions, but also fund performance (alpha) might behave in a similar way. This kind of approach was used in Cortez, Silva and Areal (2009) study, which proved that there was, once again, no significant difference between the performance of a European SRFs portfolio and Conventional Benchmarks. Our study will also explore both versions of conditional modeling and compare their results with the unconditional model results. In order to complete and toughen the conclusions, we will also add a Sharpe Ratio approach.

3. Methodology

The methodology we will follow is built in three blocks, which correspond to the research evolution in terms of portfolio's performance measures: unconditional model, partially conditional model and full conditional model. In order to complement the financial performance models, we also added a Sharpe Ratio approach.

The unconditional model is based on Jensen's alpha (or Jensen's Performance Index), which is used to determine the abnormal return of a portfolio of securities over the theoretical expected return. The theoretical return is predicted by a market model, most commonly the Capital Asset Pricing Model (CAPM) model. Jensen's alpha is used as an unconditional measure of performance and it is the intercept (α_p) factor of the CAPM-based following regression:

$$r_{p,t} = \alpha_p + \beta_p r_{m,t} + \varepsilon_{p,t} \quad [1]$$

$r_{p,t}$: excess return of portfolio *p* over period t*;*

$r_{m,t}$: market's excess return during period t;

β_p : systematic risk of the portfolio;

$\varepsilon_{p,t}$: error term.

If a portfolio's return is even higher than the risk free rate, that asset is said to have a "positive alpha" or "abnormal returns". Investors are constantly seeking investments that have a positive alpha, meaning that they will have higher returns than the overall market. But in this model, alpha and beta are both maid constant.

The simpler conditional approach of Ferson and Schadt (1996) allows only beta to be time varying, which means that the risk depends upon time and market conditions. The alpha is still kept constrained to its constant version. The conditional beta is a linear function of a vector integrating predetermined information variables, the Z_{t-1} vector, which reflects the public and published information at time *t-1* that may help predicting returns on time t. The equation of the so-called partial conditional model is as follows:

$$r_{p,t} = \alpha_p + \beta_{0p} r_{m,t} + \beta'_p(z_{t-1} r_{m,t}) + \varepsilon_{p,t} \quad [2]$$

In this second equation, the alpha translates the conditional performance measure of the portfolio. This measure will be equal to zero if only publicly available information is to be considered.

Christopherson et al. (1998) extended this simpler conditional model into a version which allows portfolio's performance to be also time varying, which means that the market value of the portfolio can change in accordance to economic conditions. In this more complete framework, both alpha and beta are a linear function of the Z_{t-1} vector, which is mathematically translated into the follow equation:

$$r_{p,t} = \alpha_{0p} + \alpha'_p z_{t-1} + \beta_{0p} r_{m,t} + \beta'_p(z_{t-1} r_{m,t}) + \varepsilon_{p,t} \quad [3]$$

α_{0p} : average alpha;

α'_p : sensitiveness of the conditional alpha to the information variables z_{t-1}.

We will determine the mutual fund performance both by using the traditional unconditional model and the two presented versions of conditional modeling.

Also, we will calculate the Sharpe Ratio, which is a measure of the risk adjusted performance. Also called as reward-to-variability ratio, it is calculated as follows:

$$S_{p,t} = \frac{r_{p,t} - r_{m,t}}{\sigma_p} \quad [4]$$

σ_p : standard deviation of the portfolio returns

The Sharpe ratio tells us whether a portfolio's returns are due to smart investment decisions or a result of excess risk. This measurement is very useful because although one portfolio or fund can reap higher returns than its peers, it is only a good investment if those higher returns do not come with too much additional risk.

4. Data

The sample we will use in order to conduct the empirical study is constituted by a total of eighty socially responsible funds belonging to eight European countries: Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland and United Kingdom. We obtained the classification of the funds as being socially responsible from the SRI Funds Advice, a European database which compiles all existing socially responsible retail funds in Europe[1]. As these funds invest globally and/or in the European market, we have decided to split our sample into 7 different categories according to Morningstar criteria:

(1) Global Large-Cap Blend Equity;
(2) Global Small/Mid Cap;
(3) Europe Large-Cap Blend Equity;
(4) Eurozone Large Cap Equity;
(5) Euro Cautious Balanced;
(6) Euro Moderate Balanced;
(7) Sector Equity

We then merged this 7 categories into 4 broader classifications: (1)+(2)=Global Equity, (3)+(4)=Europe/Eurozone Equity, (5)+(6)=Euro Balanced and (7)=Sector Equity. All the data on the returns of the funds considered is gathered from Datastream. Our sample is time restricted to the period between January 2002 and December 2010, which seemed the best time sample to use without suffering potential bias created by the financial crisis that affected most European countries after 2011. There is also a criterion for inclusion of a fund in the sample: it has to complete at least 25 observations over every single month period. The continuously compounded returns over the months involve income distributions and are net of management expenses but gross of load

[1] SRI Funds Advice is a service of Care Group AG, Switzerland that was founded in 1997 and has a longstanding experience in analyzing mutual funds and corporations regarding economical, ecological and social criteria. A qualitative and quantitative methodology allows Care Group to assess socially responsible funds worldwide on an ongoing basis. This knowledge is used to build a portfolio of sustainability funds for the CG Global Sustainable Fund of Funds, the first sustainability fund of funds in Switzerland initiated in 2003 for institutional investors.

feed. The one month Euro-Deposit rate is the proxy for the risk-free rate variable. The summary statistics on the funds' performance are presented in Table II.

Table II: Summary statistics on SRI funds

Summary statistics based on equally weighted portfolios of SRI funds are presented for each category in each country. Mean excess returns in percentage (considering monthly continuously compounded returns), standard deviation, skewness, kurtosis and the probability of the Jarque-Bera test are reported for the period January 2002 to December 2010.

	Mean excess return (%)	Standard deviation	Jarque-Bera (p value)	Skewness	Kurtosis	Number of funds
Austria						7
Balanced	1,487	0,018	1,074 (0,584)	-0,240	3,089	4
Global Equity	2,866	0,050	31,744 (0,000)	-1,110	4,457	3
Belgium						10
Balanced	3,322	0,056	34,779 (0,000)	-1,024	4,879	3
Europe/Eurozone Equity	2,262	0,032	6,038 (0,048)	-0,548	3,376	4
Global Equity	0,959	0,017	85,9895 (0,000)	-1,543	6,095	1
Sector Equity	2,290	0,039	15,4034 (0,000)	-0,798	3,936	2
France						10
Balanced	3,726	0,053	11,191 (0,004)	-0,640	3,921	1
Europe/Eurozone Equity	2,866	0,048	20,549 (0,000)	-0,934	4,037	9
Germany						1
Sector Equity	3,311	0,048	6,795 (0,033)	-0,586	3,371	1
Luxembourg						20
Balanced	3,208	0,057	9,502 (0,009)	-0,660	3,606	1
Europe/Eurozone Equity	3,188	0,046	15,692 (0,000)	-0,813	3,918	3
Global Equity	2,388	0,032	10,283 (0,006)	-0,698	3,581	7
Sector Equity	2,860	0,043	19,139 (0,000)	-0,850	4,167	9
Netherlands						2
Europe/Eurozone Equity	2,869	0,054	19,380 (0,000)	-0,865	4,147	1
Sector Equity	3,158	0,049	16,100 (0,000)	-0,821	3,940	1
Switzerland						5
Europe/Eurozone Equity	2,336	0,037	27,904 (0,000)	-1,023	4,419	3
Global Equity	2,264	0,035	7,2709 (0,026)	-0,611	3,352	2
United Kingdom						25
Balanced	3,227	0,056	16,769 (0,000)	-0,807	4,059	4
Europe/Eurozone Equity	2,522	0,038	17,434 (0,000)	-0,861	3,954	12
Global Equity	2,978	0,041	25,759 (0,000)	-1,000	4,312	6
Sector Equity	3,311	0,061	33,257 (0,000)	-1,078	4,657	3
All sample						80

We can observe positive mean excess returns behaviors in all our analyzed categories of funds. The maximum value is attributed to France Balanced Funds and the minimum to Belgium Global Equity Funds. By Skewness and Kurtosis indicators, we may conclude that these funds' return data sets are not normally distributed.

Both conventional and SRI indices are used as benchmarks in our analysis. In which refers to conventional references, MSCI AC World Index is used to benchmark Global equity funds, MSCI Europe Index is used to benchmark Europe/Eurozone and Sector equity funds and MSCI EMU is used to benchmark the balanced funds. We also use a list of socially responsible benchmark indices: FTSE4Good Global and FTSE4Good Europe. The former is used as the benchmark for Global equity funds and the latter for the Europe/Eurozone, Sector and Balanced funds. Data on these indices evolution through the period are also collected from Datastream. Monthly compounded returns are determined in the same way as described for funds above. Table III presents some summary statistics for the benchmark indices presented.

Table III: Summary Statistics on the benchmarks

Summary statistics on the conventional and socially responsible market indices for the period January 2002 to December 2010 are reported. The reported statistics are mean excess returns in percentage (considering monthly continuously compounded returns), standard deviation, skewness, kurtosis and the probability of the Jarque-Bera test.

	Mean excess return	Standard deviation	Jarque-Bera (p value)	Skewness	Kurtosis
MSCI AC World	3,632	0,055	42,717 (0,000)	-0,900	5,501
MSCI AC Europe	3,696	0,065	21,603 (0,000)	-0,724	4,644
MSCI EUR Capital Markets	3,453	0,073	19,004 (0,000)	-0,717	4,472
FTSE4Good Global	3,402	0,056	32,324 (0,000)	-0,810	5,135
FTSE4Good Europe	3,366	0,053	14,371 (0,001)	-0,758	3,945

All our reference benchmarks exhibit a positive mean excess return. The returns present slightly higher values for the Conventional Indices and very similar values between them. These benchmarks' mean excess returns also do not confirm the normality hypothesis.

Evolving to the conditional models, we consider a set of lagged information variables that previous research has proven to be useful in predicting stock and bonds returns (Keim and Stambaugh, 1986; Fama and French, 1989). We decided to use global information variables instead of local or regional ones and this choice is justified by the increasing global level of integration of stock exchange markets and also by the fact that we are analyzing funds that invest abroad. We consider five variables to capture the available information believed to cause persistence effect: a term spread, a short term rate, a default spread, a dividend yield and a January dummy. These variables are assumed to capture the information momentum in funds' performance market. The latter variable cited is intended to capture seasonable effects on returns and risk; the formers are considered a good measure for the state of the economy scene. The short term rate is the yield on a constant maturity 3-month US Treasury Bill. The spread term is calculated as the difference between a constant maturity 10 year US Treasury Bond yield and a constant maturity 3 month US Treasury Bill yield. The default spread is ciphered by the difference between the Moody's US BAA rated corporate bond yield and the AAA one. The dividend yield is based on FTSE AW Index and assumes that the dividends are reinvested in the respective fund. The data on these variables are also gathered from Datastream. All these market variables tend to be highly persistent, which impels for some type of control over spurious regressions effect. In this sense, we test the normality, heteroscedasticity and autocorrelation of the residual terms and control those effects whenever necessary.

5. Empirical Results

We analyzed our sample of mutual funds using the 4 levels of aggregation exposed before. The aggregation results from using an equally weighted portfolio of funds for each country and each fund category.

The first step of our analysis applies the traditional mainstream model which determines funds' return under the assumption of unconditional variables. We undertake the comparison between our sample of socially responsible funds and both conventional and other socially responsible indices benchmarks. The results are summarized in Table IV.

Table IV: Estimates of unconditional socially responsible fund performance

Panel A of this table presents regression estimates for equally weighted portfolios of funds computed for each category in each country using unconditional models. Alphas (α) expressed in percentage, systematic risk (β) and the adjusted coefficient of determination (R2) are reported. Regression residuals are tested using the Jarque-Bera test for normality, the White (1980) test for heteroscedasticity if the residuals are not normal, the Breusch and Pagan (1979) for heteroscedasticity if the residuals are normal and the Durbin-Watson test for autocorrelation. Standard errors are corrected, whenever appropriate, for the presence of heteroscedasticity using the correction of White (1980), or for the presence of autocorrelation and heteroscedasticity using the procedure suggested by Newey and West (1994). Panel B reports the same type of estimates obtained by regressing SRI indices on conventional indices.

	PANEL A						
	Number of funds	Conventional Indices			SRI Indices		
		α	β	R²	α	β	R²
Austria							
Balanced	4	-0,032	0,132 ***	27,9%	0,044	0,258 ***	55,6%
Global Equity	3	-0,352	0,642 ***	50,2%	-0,236	0,597 ***	46,0%
Belgium							
Balanced	3	-0,022	0,670 ***	75,9%	0,296	0,988 ***	86,3%
Europe/Eurozone Equity	4	-0,054	0,310 ***	40,4%	0,126	0,509 ***	72,2%
Global Equity	1	-0,139	0,109 ***	12,5%	-0,119	0,104 ***	12,1%
Sector Equity	2	-0,122	0,358 ***	34,9%	0,080	0,560 ***	56,7%
France							
Balanced	1	-0,099	0,615 ***	72,1%	0,205 *	0,960 ***	91,6%
Europe/Eurozone Equity	9	-0,188	0,479 ***	41,1%	0,082	0,751 ***	67,3%
Germany							
Sector Equity	1	-0,286	0,485 ***	43,3%	-0,004	0,799 ***	78,4%
Luxembourg							
Balanced	1	-0,024	0,662 ***	71,0%	0,298 **	1,009 ***	86,0%
Europe/Eurozone Equity	3	-0,053	0,582 ***	67,5%	0,259 ***	0,835 ***	92,5%
Global Equity	7	-0,016	0,467 ***	64,9%	0,068	0,447 ***	62,9%
Sector Equity	9	-0,068	0,563 ***	72,2%	0,229 **	0,781 ***	92,5%
Netherlands							
Europe/Eurozone Equity	1	0,065	0,460 ***	30,1%	0,323	0,716 ***	48,6%
Sector Equity	1	-0,073	0,455 ***	36,6%	0,188	0,734 ***	63,6%
Switzerland							
Europe/Eurozone Equity	3	-0,144	0,344 ***	35,9%	0,050	0,542 ***	59,3%
Global Equity	2	-0,280	0,461 ***	51,0%	-0,197	0,438 ***	48,8%
United Kingdom							
Balanced	4	-0,175	0,680 ***	78,5%	0,153	1,022 ***	92,6%
Europe/Eurozone Equity	12	-0,161	0,472 ***	65,8%	0,094	0,686 ***	92,6%
Global Equity	6	-0,111	0,652 ***	75,4%	0,006	0,628 ***	74,0%
Sector Equity	3	-0,376	0,800 ***	73,0%	0,039	1,081 ***	88,8%

	PANEL B		
	α	β	R²
FTSE4Good Europe	-0,377	0,712 ***	76,2%
FTSE4Good Global	-0,181 **	0,010 ***	98,4%

*** Statistically significant at the 1% level
** Statistically significant at the 5% level
* Statistically significant at the 10% level

The portfolios of socially responsible funds analyzed do not outperform nor underperform either unscreened or screened indices, presenting in most cases a neutral performance. The categories that have a statistically significant positive mean excess return when compared with socially responsible indices are: Balanced funds both in France and Luxembourg and Europe/Eurozone Equity and Sector Equity also in Luxembourg. Table IV shows that there seems to be a tendency for alphas to be slightly higher when comparing these funds to the screened benchmarks and lower when comparing to the unscreened ones. Furthermore, it is interesting to note that the socially responsible funds in our sample are more sensitive to socially responsible indices than to conventional indices, as betas are lower when computed against the latter. Also, the explanatory power of the model is higher in the context of socially responsible benchmarks, suggesting that these are more useful than conventional benchmarks in explaining the performance of socially responsible funds.

In Table IV panel B, we also compared our socially responsible benchmarks with our unscreened benchmark. The negative alpha from this regression indicates that socially responsible indices tend to perform worse than conventional broad market indices, although this is only statistically significant for the Global Indices. The high adjusted R^2 obtained reflects a very strong correlation between the excess returns of both indices, especially between the global indices.

Applying the partial conditional model – the one that allows betas to be time-varying – in order to determine our sample of funds' performance, the first stated conclusions keep their core strength. Table V summarizes the results

Table V: Estimates of conditional socially responsible fund performance (time varying betas)

Regression estimates for equally weighted portfolios of funds computed for each category in each country using conditional models. Alphas (α) expressed in percentage, conditional beta coefficients and the adjusted coefficient of determination (R2) are reported. Conditional beta estimates β0, β1, β2, β3, β4 and β5 are the coefficients of the market index and the cross products of the market index and the respective predetermined information variables: the term spread, a short term rate, a default spread, a dividend yield and a January dummy. Regression residuals are tested using the Jarque-Bera test for normality, the White (1980) test for heteroscedasticity if the residuals are not normal, the Breusch and Pagan (1979) for heteroscedasticity if the residuals are normal and the Durbin-Watson test for autocorrelation. Standard errors are corrected, whenever appropriate, for the presence of heteroscedasticity using the correction of White (1980), or for the presence of autocorrelation and heteroscedasticity using the procedure suggested by Newey and West (1994).

	# of funds	Conditional Conventional Indices							
		α	β_0	β_1	β_2	β_3	β_4	β_5	R^2
Austria									
Bal.	4	-0,058	-0,361 **	0,124 ***	0,124 ***	0,040	0,003 ***	-0,299 ***	44,0%
Global Eq.	3	0,016	-0,485	0,321 **	0,381 ***	-0,056	-0,012 **	-0,433	67,0%
Belgium									
Bal.	3	0,113	-0,117	0,131	0,187 *	0,141 **	-0,002	-0,201	79,1%
Europe Eq.	4	0,001	-0,648 **	0,232 ***	0,259 ***	0,055	-0,001	-0,248	52,9%
Global Eq.	1	-0,119	0,103	0,033	0,007	-0,026	0,002	-0,534 *	28,5%
Sector Eq.	2	0,269	-0,149	0,120	0,186 **	$0,00^{2}6$	-0,009 *	-0,711 ***	53,8%
France									
Bal.	1	-0,174	-0,169	0,166	0,202 **	0,096	0,004	-0,249	75,0%
Europe Eq.	9	0,192	-0,500	0,231 *	0,302 ***	0,032	-0,010 *	-0,508 **	56,3%
Germany									
Sector Eq.	1	-0,296	-0,857 **	0,331 ***	0,343 ***	0,067	0,005	-0,504 *	56,8%
Luxembourg									
Bal.	1	-0,037	-0,031	0,162	0,153 **	0,070	0,002	-0,096	72,0%
Europe Eq.	3	0,041	-0,231	0,198 **	0,223 ***	0,043	-0,002	-0,276	72,6%
Global Eq.	7	0,023	-0,094	0,167 **	0,192 ***	-0,026	-0,001	-0,254	73,3%
Sector Eq.	9	0,034	-0,060	0,124	0,164 ***	0,073 *	-0,002	-0,219	75,4%
Netherlands									
Europe Eq.	1	0,723	-0,162	0,136	0,260 *	-0,020	-0,020 ***	-0,578 **	49,8%
Sector Eq.	1	0,254	-1,016 **	0,357 ***	0,398 ***	0,073	-0,007	-0,477 **	53,5%
Switzerland									
Europe Eq.	2	0,254	-0,373	0,172	0,223 ***	0,018	-0,010 **	-0,541 ***	55,3%
Global Eq.	2	-0,308	-0,531	0,283 ***	0,312 ***	-0,019	0,001	-0,162	63,4%
United Kingdom									
Bal.	4	-0,185	0,371	0,048	0,114 *	0,043	0,000	-0,166	80,1%
Europe Eq.	12	-0,034	-0,077	0,130 **	0,154 ***	0,031	-0,003	-0,279	70,8%
Global Eq.	6	-0,004	-0,321	0,254 ***	0,261 ***	0,026	-0,002	-0,114	80,6%
Sector Eq.	3	-0,136	0,114	0,128	0,206 **	0,067	-0,007	-0,153	76,7%

*** Statistically significant at the 1% level; ** Statistically significant at the 5% level; * Statistically significant at the 10% level

Table V: Estimates of conditional socially responsible fund performance (time varying betas)

(Continued)

	# of funds	Conditional SRI Indices							
		α	β_0	β_1	β_2	β_3	β_4	β_5	R^2
Austria									
Bal.	4	-0,016	-0,073	0,089	0,089	0,002	0,003	-0,048	58,5%
Global Eq.	3	0,189	-0,628	0,329 **	0,404 ***	-0,025	-0,012 **	-0,418	63,9%
Belgium									
Bal.	3	0,560 ***	1,082 **	-0,084	-0,044	0,081 *	-0,010	-0,030	87,7%
Europe Eq.	4	0,186	-0,227	0,167 ***	0,199 ***	0,025	-0,001	0,059 **	76,8%
Global Eq.	1	-0,107	0,052	0,043	0,018	-0,026	0,001	-0,420 *	23,9%
Sector Eq.	2	0,426 *	0,706	-0,021	0,016	-0,100	-0,016 **	-0,105	60,9%
France									
Bal.	1	0,205 *	1,469 ***	-0,133	-0,085	-0,045	-0,003	0,164 **	92,1%
Europe Eq.	9	0,465 **	0,437	0,068	0,130	-0,054	-0,017 **	0,001	72,0%
Germany									
Sector Eq.	1	-0,060	-0,052	0,216 **	0,240 **	0,000	0,004	0,042	81,5%
Luxembourg									
Bal.	1	0,364 **	1,122 ***	-0,014	-0,049	-0,020	-0,003	0,244 **	86,4%
Europe Eq.	3	0,367 ***	0,734 **	0,030	0,049	-0,033	-0,005	-0,025	93,2%
Global Eq.	7	0,136	-0,184	0,172 ***	0,211 ***	-0,006	-0,001	-0,235	72,1%
Sector Eq.	9	0,345 ***	0,794 ***	-0,030	-0,001	0,025	-0,005	0,029	92,9%
Netherlands									
Europe Eq.	1	1,005 **	1,095	-0,097	0,015	-0,160	-0,032 ***	-0,103	57,2%
Sector Eq.	1	0,564 **	-0,345	0,251 **	0,288 ***	0,011	-0,013	-0,111	70,0%
Switzerland									
Europe Eq.	2	0,439 **	0,414	0,033	0,077	-0,068	-0,017 **	-0,130	65,4%
Global Eq.	2	-0,186	-0,650 **	0,291 ***	0,338 ***	0,009	0,001	-0,171	62,8%
United Kingdom									
Bal.	4	0,203	1,913 ***	-0,216 **	-0,156 *	-0,097	-0,006	0,081	93,3%
Europe Eq.	12	0,205 **	0,745 ***	-0,009	0,006	-0,040	-0,005	0,066	93,2%
Global Eq.	6	0,135	-0,476 *	0,272 ***	0,296 ***	0^3,054	-0,002	-0,121	80,6%
Sector Eq.	3	0,350	1,342 ***	-0,091	-0,040	-0,021	-0,014 *	0,021	90,0%

*** Statistically significant at the 1% level; ** Statistically significant at the 5% level; * Statistically significant at the 10% level

The alphas found in this attempt remain neutral or slightly positive, as there is a tendency for them to be structurally higher than in the former model. The conclusions over the benchmarks remain untouchable. The explanatory power of the conditional model is higher than the unconditional framework. Ferson and Schadt (1996) have also shown that conditional models are better in explaining fund performance in general. Once again, the explanatory power is higher in the context of socially responsible benchmarks, suggesting that these are more useful than conventional benchmarks in explaining the performance of socially responsible funds. This result is quite intuitive, as theoretically one would expect that indices that are restricted according to social criteria would have a higher ability to explain the returns of funds that are also constructed on the basis of a restricted universe of stocks.

The final application of the complete conditional model – which allows for alphas and betas to be time-varying – shows no significant change in the results elapsed from the partial version of the conditional methodology.

Table VI: Estimates of conditional socially responsible fund performance (time varying alphas and betas)

This table presents regression estimates for equally weighted portfolios of funds computed for each category in each country using conditional models (equation 3). Alphas(α) expressed in percentage, conditional alpha coefficients and the adjusted coefficient of determination (R2) are reported. Conditional alphas estimates α0, α1, α2, α3, α4and α5 are the average alpha and coefficients of the respective predetermined information variables: the term spread, a short term rate, a default spread, a dividend yield and a January dummy. Regression residuals are tested using the Jarque-Bera test for normality, the White (1980) test for heteroscedasticity if the residuals are not normal, the Breusch and Pagan (1979) for heteroscedasticity if the residuals are normal and the Durbin-Watson test for autocorrelation. Standard errors are corrected, whenever appropriate, for the presence of heteroscedasticity using the correction of Cribari-Neto (2004) which performs better in smaller samples than White (1980), or for the presence of autocorrelation and heteroscedasticity using the procedure suggested by Newey and West (1994).[4]

	# of funds	Conditional Conventional Indices						
		α_0	α_1	α_2	α_3	α_4	α_5	R^2
Austria								
Bal.	4	1,437	-0,332	-0,353 *	0,047	0,326 ***	-2,222	63,3%
Global Eq.	3	0,676	-0,478	-0,421	1,258	-1,190	0,359	68,5%
Belgium								
Bal.	3	0,052	-0,219	-0,118	0,498	0,997 ***	-0,198	85,8%
Europe Eq.	4	0,529	-0,270	-0,250	0,325	0,925 ***	0,737	66,7%
Global Eq.	1	0,353	-0,036	-0,112	0,277	-1,116 *	-4,569 ***	79,8%
Sector Eq.	2	0,368	-0,259	-0,204	0,807	1,083 ***	-1,859	68,5%
France								
Bal.	1	0,518	0,069	-0,129	-0,711	0,676 ***	-0,446	79,0%
Europe Eq.	9	0,099	-0,333	-0,225	0,926	1,395 ***	0,697	69,7%
Germany								
Sector Eq.	1	0,207	-0,216	-0,147	-0,054	1,356 ***	-0,146	68,0%
Luxembourg								
Bal.	1	1,559	-0,406	-0,331	-0,254	0,554 ***	0,637	74,2%
Europe Eq.	3	0,238	-0,161	-0,143	0,249	0,894	0,118	78,5%
Global Eq.	7	0,671	-0,158	-0,227	0,247	-0,029	-0,784	74,2%
Sector Eq.	9	-0,092	-0,089	-0,086	0,319	0,939	-0,205	82,7%
Netherlands								
Europe Eq.	1	-0,175	-0,225	-0,119	1,208	1,476 ***	1,440	61,8%
Sector Eq.	1	0,411	-0,400	-0,277	0,950	1,368 ***	0,491	66,5%
Switzerland								
Europe Eq.	2	0,236	-0,237	-0,197	0,800	1,029 ***	-0,921	68,9%
Global Eq.	2	1,309	-0,456	-0,474	0,302	0,328	0,571	64,5%
United Kingdom								
Bal.	4	-1,027	0,223	0,034	0,257	0,361 **	-0,512	81,3%
Europe Eq.	12	-0,015	-0,069	-0,096	0,201	0,831 ***	-0,519	78,5%
Global Eq.	6	1,374	-0,312	-0,392	0,149	0,043	-0,261	81,1%
Sector Eq.	3	-0,659	-0,150	-0,025	0,660	1,042 ***	0,086	81,3%

*** Statistically significant at the 1% level; ** Statistically significant at the 5% level; * Statistically significant at the 10% level

Table VI: Estimates of conditional socially responsible fund performance (time varying alphas and betas)

(Continued)

	# of funds	Conditional SRI Indices						
		α_0	α_1	α_2	α_3	α_4	α_5	R^2
Austria								
Bal.	4	1,682	-0,307	-0,327 *	-0,093	-0,039	-2,482 *	73,9%
Global Eq.	3	0,447	-0,382	-0,343	0,902	1,629 ***	-0,353	69,6%
Belgium								
Bal.	3	0,125	-0,236	-0,052	0,729	0,406 ***	-0,183	91,0%
Europe Eq.	4	1,422	-0,334	-0,295	0,168	-0,104	-0,033	77,5%
Global Eq.	1	0,643	-0,092	-0,172	0,179	0,233 *	-4,764 ***	78,9%
Sector Eq.	2	2,220	-0,462	-0,339	0,186	0,000	-3,278 ***	66,4%
France								
Bal.	1	0,558	-0,047	-0,096	-0,121	0,124 *	-0,150	92,4%
Europe Eq.	9	2,058	-0,536	-0,363	0,415	-0,077	-0,826	72,7%
Germany								
Sector Eq.	1	1,566	-0,365	-0,273	-0,013	-0,209	-1,346	83,2%
Luxembourg								
Bal.	1	0,238	-0,255	-0,071	0,618	0,087	1,096 **	87,2%
Europe Eq.	3	0,374	-0,126	-0,050	0,360	0,017	-0,199	93,3%
Global Eq.	7	0,651	-0,126	-0,201	0,136	0,554 **	-0,941	74,3%
Sector Eq.	9	0,420	-0,173	-0,101	0,443	0,120	-0,415	93,6%
Netherlands								
Europe Eq.	1	2,680	-0,574	-0,353	0,332	-0,040	-0,582	57,6%
Sector Eq.	1	1,547	-0,422	-0,278	0,656	-0,121	-0,942	70,9%
Switzerland								
Europe Eq.	2	1,701	-0,369	-0,281	0,327	-0,033	-2,176	68,3%
Global Eq.	2	1,017	-0,349	-0,382	0,165	0,620 **	0,403	40,3%
United Kingdom								
Bal.	4	-2,389 ***	0,365 *	0,384 **	0,921 ***	0,104	0,189	94,0%
Europe Eq.	12	0,474	-0,126	-0,098	0,276	0,005	-0,837 **	93,7%
Global Eq.	6	1,378	-0,280	-0,371	0,071	0,426	-0,292	81,6%
Sector Eq.	3	-0,736	-0,109	0,125	0,851	0,212 **	0,063	91,2%

*** Statistically significant at the 1% level; ** Statistically significant at the 5% level; * Statistically significant at the 10% level

The explanatory strength of this model is, as expected, more accurate than the former. The comparison between screened and unscreened benchmarks remains unchanged, which means that alphas and R^2 continue to be higher when we use the socially responsible funds as a benchmark. This is a very important conclusion to be retained from this exercise.

Finally, we also calculated the Sharpe Ratio both using Conventional Benchmarks and SRI Benchmarks in comparison to our European SRFs portfolio.

Table VII: Sharpe Ratio Calculation

This table presents the Sharpe Ratio calculation both using the Conventional Indices and the SRI Indices.

	Number of funds	Conventional Indices	SRI Indices
Austria	7		
Balanced	4	-0,027	0,048
Global Equity	3	-0,111	-0,062
Belgium	10		
Balanced	3	-0,021	0,144
Europe/Eurozone Equity	4	-0,043	0,074
Global Equity	1	-0,072	-0,036
Sector Equity	2	-0,052	0,050
France	10		
Balanced	1	-0,041	0,138
Europe/Eurozone Equity	9	-0,062	0,044
Germany	1		
Sector Equity	1	-0,083	0,015
Luxembourg	20		
Balanced	1	-0,020	0,138
Europe/Eurozone Equity	3	-0,040	0,192
Global Equity	7	-0,044	0,007
Sector Equity	9	-0,047	0,166
Netherlands	2		
Europe/Eurozone Equity	1	-0,011	0,092
Sector Equity	1	-0,039	0,075
Switzerland	5		
Europe/Eurozone Equity	3	-0,058	0,043
Global Equity	2	-0,108	0,017
United Kingdom	25		
Balanced	4	-0,065	0,097
Europe/Eurozone Equity	12	-0,070	0,082
Global Equity	6	-0,072	-0,008
Sector Equity	3	-0,125	0,011
All sample	80		

Overall, the Sharpe ratio values are extremely low, which attests the former conclusions – there is no significant difference between the financial performance of the elements being compared. Nevertheless, the Sharpe ratio is slightly negative when we compare our European SRFs with Conventional Indices and slightly positive when we compare them with SRI Indices. This last evidence is also compatible with our former results, as we found higher alphas when we used SRI Indices as benchmarks then when we used Conventional Indices.

Summarizing, there is no statistically significant evidence of better or worse performance of socially responsible funds when compared to conventional indices or socially responsible indices. The results of this analysis point to a neutral financial performance when you invest according to social and environmental criteria.

6. Conclusion

The question of whether or not the performance of funds is affected by the introduction of socially responsible screens is a very pertinent one, given the most recent tendency for these portfolios of investments to grow over the market. In synthesis, empirical studies until date have not shown any significant difference between the performance of screened mutual funds and their conventional counterparts. But however interesting the literature may seem on this issue, the truth is that it is still biased for the study of the United States stock exchange market. With the exception of the United Kingdom and France, European markets have yet very seminal examples of socially responsible funds' performance analysis. This paper is an attempt to overcome this handicap: by focusing the analysis in eight European countries' funds returns, and comparing them with conventional and socially responsible indices benchmarks, we intend to contribute for the completion of the literature on European responsible investments. Using both unconditional and conditional models (Cortez et al., 2009), we believe we have completed the first incursion over the analysis of the performance of this European sample of socially responsible funds – both in terms of countries and funds classes. This study makes sense given the recent researchers' belief in the capacity of the conditional models to predict portfolios' returns.

Our general conclusion is that socially screened portfolios of funds show no evidence of underperforming their peers. In addition to this main statement, we also found a persistent tendency for socially responsible indices to be more explanatory than conventional benchmarks. Furthermore, socially responsible funds' performance seems to be more sensitive in relation to screened indices than unscreened ones, meaning that socially responsible indices show higher betas than conventional indices.

As socially responsible funds do not leave any evidence of underperforming the conventional indices peers, they leave us the evidence that it is possible to add screens to a portfolio without compromising the portfolio's returns.

Conditional models showed to be more powerful in the capacity for explaining the returns of socially responsible funds. This means that the macroeconomic variables used in the conditional model showed to be relevant to determine the funds' performance.

In conclusion, this study is supportive of the assumption that it is possible to "do well while doing good" as socially responsible investments do not seem to underperform their counterparts. These findings are robust and aligned with former studies on the issue (addressing other markets and using other methodologies) and are important for both investors and academics.

Together, these conclusions have important implications for investors, who can choose to invest on European socially responsible mutual funds without sacrificing financial performance.

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